

Application No. 10/781,466
Amendment C dated June 28, 2006
Reply to Office Action mailed January 30, 2006

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An optical coupler comprising:
an optical element having a substantially flat side and a substantially convex side;
a detector spaced from the convex side of the optical element; and
an optical fiber positioned adjacent to the substantially flat side of the optical element wherein the substantially flat side of the optical element is oriented substantially perpendicular to an optical axis associated with the optical coupler and the optical element is adapted to direct light delivered by the optical fiber to the spaced detector such that light that is reflected by the detector does not substantially couple back into the optical fiber wherein the optical element is adapted to produce at least a partial annular shaped light pattern on the detector.

2. (Canceled)

3. (Currently Amended) ~~The optical coupler of claim 1~~ An optical coupler comprising:
an optical element having a substantially flat side and a substantially convex side;
a detector spaced from the convex side of the optical element; and
an optical fiber positioned adjacent to the substantially flat side of the optical element
wherein the substantially flat side of the optical element is oriented substantially
perpendicular to an optical axis associated with the optical coupler and the optical
element is adapted to direct light delivered by the optical fiber to the spaced detector such
that light that is reflected by the detector does not substantially couple back into the
optical fiber wherein the optical element is adapted to produce an annular light pattern on
the detector.

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4. **(Currently Amended):** ~~The optical coupler of claim 1~~ An optical coupler comprising:

an optical element having a substantially flat side and a substantially convex side;
a detector spaced from the convex side of the optical element; and
an optical fiber positioned adjacent to the substantially flat side of the optical element
wherein the substantially flat side of the optical element is oriented perpendicular to an
optical axis associated with the optical coupler and the optical element is adapted to
direct light delivered by the optical fiber to the spaced detector such that light that is
reflected by the detector does not substantially couple back into the optical fiber; wherein
the optical element includes a focal point and the detector is positioned relative to the
optical element such that the light from the optical element is not defocused on the
detector.

5. **(Previously Presented)** The optical coupler of claim 1 wherein the optical
fiber abuts the substantially flat side of the optical element.

6. **(Canceled)**

7. **(Canceled)**

8. **(Canceled)**

9. **(Canceled)**

10. **(Canceled)**

11. **(Currently Amended)** ~~A system~~ An optical coupler according to claim 1[0]
~~wherein the optical fiber abuts to the optical element, and the optical fiber includes a core~~
that has an index of refraction that at least substantially matches an index of refraction of
the optical element.

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12. (Canceled)

13. (Canceled)

14. (Currently Amended) A light transmission system comprising:
a light source;
a detector; and
an optical element positioned between the light source and the detector,
wherein the optical element is ~~configured to receive uncollimated light from the~~
~~light source and is further configured to direct more than half of the light that is~~
~~transmitted from the light source onto the detector, and to direct less than half of the light~~
~~that is reflected by the detector back to the light source, and wherein the optical element~~
is configured to produce an annular light pattern on the detector wherein the lens has a
substantially plano-convex shape.

15. (Canceled)

16. (Original) The light transmission system of claim 14 wherein said optical element has a focal point that is in front of the detector.

17. (Original) The light transmission system of claim 14 wherein said optical element has a focal point that is behind the detector.

18. (Original) The light transmission system of claim 14 wherein said optical element comprises a lens that is shaped to produce an annular light pattern on the detector.

19. (Canceled)

20. (Original) The light transmission system of claim 14 wherein said light source includes an optical fiber.

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21. (Original) The light transmission system of claim 14 wherein said light source includes a laser.

22. (Original) The light transmission system of claim 14 wherein said light source includes a Light Emitting Diode (LED).

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Currently Amended) ~~The optical coupler of claim 1,~~ An optical coupler comprising:

an optical element having a substantially flat side and a substantially convex side;

a detector spaced from the convex side of the optical element; and

an optical fiber positioned adjacent to the substantially flat side of the optical element wherein the substantially flat side of the optical element is oriented perpendicular to an optical axis associated with the optical coupler and the optical element is adapted to direct light delivered by the optical fiber to the spaced detector such that light that is reflected by the detector does not substantially couple back into the optical fiber wherein the substantially convex lensside has a slope discontinuity that is located proximate the optical axis.

29. (Currently Amended) The optical coupler of claim 28, wherein the slope discontinuity comprises a curvature discontinuity of the substantially convex lensside.

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30. **(Currently Amended)** The ~~light transmission system~~optical coupler of claim [6]1, wherein the ~~second surface~~substantially convex side of the optical element has a discontinuous slope.

31. **(Currently Amended)** The ~~light transmission system~~optical coupler of claim 30, wherein the ~~second surface~~substantially convex side of the optical element is grooved.

32. **(Previously Presented)** The light transmission system of claim 14 wherein the optical element is further configured to diverge the light received from the light source as it is transmitted through the optical element.

33. **(Previously Presented)** The light transmission system of claim 14 wherein the light source abuts a surface of the optical element.

34. **(Previously Presented)** The light transmission system of claim 33 wherein the light source is an optical fiber and an index of refraction of the optical element matches or substantially matches an index of refraction of the optical fiber.

35. **(Canceled)**

36. **(Currently Amended)** The light transmission system of claim [2]14, wherein said optical element has a focal point wherein the light has a non-annular intensity profile at the focal point.